



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,165	08/16/2001	Howard Scott Forstrom	0918.0029C	1516

27896 7590 05/28/2004

EDELL, SHAPIRO, FINNAN & LYTLE, LLC  
1901 RESEARCH BOULEVARD  
SUITE 400  
ROCKVILLE, MD 20850

EXAMINER

ISSING, GREGORY C

ART UNIT	PAPER NUMBER
----------	--------------

3662

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/930,165

Applicant(s)

FORSTROM ET AL.

Examiner

Gregory C. Issing

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/03/01, 02/03/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

1. The claims set forth a plurality of aspects of the claimed subject matter including: the method/apparatus of the system for locating an emitter (claims 1/76 and 102), the communication device (claims 28 and 49), and the reference communication device providing synchronization (claim 64 and 72). Thus, all of the claims are not directed to the same subject matter which is required under 37 CFR 1.141. Thus, the applicants are required, in response to this Office Action, assure that all of the claims are directed to the same invention. For example, the synchronization of base stations' claims have nothing directed to locating an emitter. If the applicant elects to separately argue and maintain these claims apart from the system and method for locating an emitter, a restriction requirement will be ensuing.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-102 are rejected under 35 U.S.C. 102(a) as being anticipated by Hulbert et al (*GB 2 353 671*).

4. Hulbert et al teach the determination of location of an emitter substantially as claimed, see page 3, lines 17-26 and page 13, lines 7-10, utilizing TOA information, received at respective base stations, and each respective base station's known position, and further suggests synchronization occurring in a distributed or centralized manner, page 8, lines 3-6 and 10-24.

Hulbert et al teach the transmission of a synchronization signal from a first station, reception of a

Art Unit: 3662

signal from other base stations in range and calculating a time difference between local clock pulses at the first station and clock pulses transmitted by the other base stations wherein the other base stations transmit only after they have received the synchronization burst from the first station. Thus, Hulbert et al disclose both the claimed synchronization scheme as well as the use of the synchronization scheme in a position determination system using time of arrival information.

5. Claims 1, 9, 10-27 and 102 are rejected under 35 U.S.C. 102(e) as being anticipated by Doles et al (*US 2001/0030625*).

6. Doles et al disclose the claimed invention including readers 30-1 to 30-3 which meet the scope of the communication devices and a geolocation processor 64 and reference tag 41 that meets the scope of the claimed reference communication device wherein the location of the tag 43 is determined using a plurality of times of arrival. Each tag reader performs a time of arrival measurement on a tag 43 emission referenced to a local clock at the respective reader [0028] and therefore meets the step (a) of claim 1 for example. The geolocation processor 24 determines the position of the emitter using the known positions of the readers [0031] as well as the respective detection times to multi-laterate the position of the emitter and therefore meets the scope of step (d) of claim 1. Additionally, there exists a clock offset database that stores differences determined between each local clock and a common time reference and adjusts the respective TOAs thereby meeting the scope of steps (b) and (c) respectively of claim 1. The various claimed embodiments of the wireless radio emitter are deemed to be within the scope of the disclosed mobile, wireless radio emitter of Doles et al. As noted, the synchronization is

Art Unit: 3662

determined through the use of a reference transmitter transmitting a signal to each of the readers which is utilized to determine the reader local clock offsets therefrom.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-8 and 28-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doles et al (*US 2001/0030625*) in view of McKay et al (*EP 1 073 216*).

9. Doles et al teach the subject matter substantially as claimed as set forth above but do not disclose the claimed method for determining the timing differences wherein the receiver communication device exchanges signals with the reference communication device. McKay et al [0008]-[0009] teach the use of a communication channel exchange of information to provide accurate timing between unsynchronized base stations which is a necessity in systems determining emitter location using TOAs. Though McKay et al teach the exchange of information initiating in the serving base station as opposed to the claimed system wherein the exchange is initiated at the remote station, the same type of exchange and the same information is provided. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Doles et al by incorporating the synchronization method suggested by McKay in order to accurately provide the necessary synchronization of base station clocks in order to utilize time of arrival information for determining the location of an emitter.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Drebing et al (3,848,254) disclose a method for locating vehicles wherein a

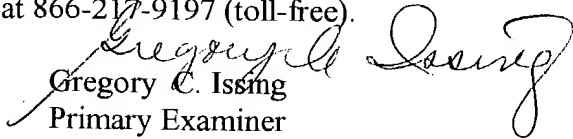
Art Unit: 3662

plurality of base stations E1-E3 measure time of arrival information of a radio emitter FZ, which information is forwarded to a central processing station Z for determining the emitter position. Compensation for transit time fluctuations in the evaluation and transmission devices is also taught. Irvin et al (6,518,921) disclose a cellular positioning system wherein time of arrival information is compensated for component tolerances. Anderson et al (5,469,409) disclose a conventional clock calibration method in a position determination system using time of arrival data. Johnson (6,310,576) discloses a variety of prior art methods for providing synchronization in time of arrival methods.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156. The examiner can normally be reached on Mon-Thurs 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703)-306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gregory C. Issing  
Primary Examiner  
Art Unit 3662